

SEQUENCE LISTING



<110> Wise, Lyn M
Mercer, Andrew A
Savory, Loreen J
Fleming, Stephen B
Stacker, Stephen

<120> VASCULAR ENOTHELIAL GROWTH FACTOR-LIKE PROTEIN FROM ORF
VIRUS NZ2 BINDS AND ACTIVATES MAMMALIAN VEGF
RECEPTOR-2, AND USES THEREOF

<130> Sequence Listing for 09/431,833

<140> US/09/431,833

<141> 1999-11-02

<150> 60/106,689

<151> 1998-11-02

<150> 60/106,800

<151> 1998-11-03

<160> 11

<170> PatentIn Ver. 2.0

<210> 1

<211> 402

<212> DNA

<213> Orf virus

<400> 1

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attgttggtc ctgtaagcga gacgcacca gagctgactt ctcagcgggt caaccgcgcg 180
tgtgtcacgt tgatgcgatg cggcgggtgc tgcaacgacg agagcttggga atgcgtcccc 240
acggaagaag taaacgtgac gatggaactc ctggggggcgt cgggctccgg tagtaacggg 300
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acgccaccga cgaccacaag gccgcccaga agacgccgct ag 402
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<210> 2

<211> 133

<212> PRT

<213> Orf virus

<400> 2

Met Lys Leu Leu Val Gly Ile Leu Val Ala Val Cys Leu His Gln.Tyr

47

1	5	10	15
Leu Leu Asn Ala Asp Ser Asn Thr Lys Gly Trp Ser Glu Val Leu Lys			
20	25	30	
Gly Ser Glu Cys Lys Pro Arg Pro Ile Val Val Pro Val Ser Glu Thr			
35	40	45	
His Pro Glu Leu Thr Ser Gln Arg Phe Asn Pro Pro Cys Val Thr Leu			
50	55	60	
Met Arg Cys Gly Gly Cys Cys Asn Asp Glu Ser Leu Glu Cys Val Pro			
65	70	75	80
Thr Glu Glu Val Asn Val Thr Met Glu Leu Leu Gly Ala Ser Gly Ser			
85	90	95	
Gly Ser Asn Gly Met Gln Arg Leu Ser Phe Val Glu His Lys Lys Cys			
100	105	110	
Asp Cys Arg Pro Arg Phe Thr Thr Thr Pro Pro Thr Thr Thr Arg Pro			
115	120	125	
Pro Arg Arg Arg Arg			
130			

<210> 3
 <211> 147
 <212> PRT
 <213> Homo sapiens

<400> 3

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu			
1	5	10	15
Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly			
20	25	30	
Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln			
35	40	45	
Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu			
50	55	60	
Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu			
65	70	75	80

Met Arg Cys Gly Gly Cys Ser Asn Asp Glu Gly Leu Glu Cys Val Pro
85 90 95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
100 105 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
115 120 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Cys Asp Lys
130 135 140

Pro Arg Arg
145

<210> 4

<211> 191

<212> PRT

<213> Homo sapiens

<400> 4

Met Asn Phe Leu Leu Ser Trp Val His Trp Ser Leu Ala Leu Leu Leu
1 5 10 15

Tyr Leu His His Ala Lys Trp Ser Gln Ala Ala Pro Met Ala Glu Gly
20 25 30

Gly Gly Gln Asn His His Glu Val Val Lys Phe Met Asp Val Tyr Gln
35 40 45

Arg Ser Tyr Cys His Pro Ile Glu Thr Leu Val Asp Ile Phe Gln Glu
50 55 60

Tyr Pro Asp Glu Ile Glu Tyr Ile Phe Lys Pro Ser Cys Val Pro Leu
65 70 75 80

Met Arg Cys Gly Gly Cys Ser Asn Asp Glu Gly Leu Glu Cys Val Pro
85 90 95

Thr Glu Glu Ser Asn Ile Thr Met Gln Ile Met Arg Ile Lys Pro His
100 105 110

Gln Gly Gln His Ile Gly Glu Met Ser Phe Leu Gln His Asn Lys Cys
115 120 125

Glu Cys Arg Pro Lys Lys Asp Arg Ala Arg Gln Glu Asn Pro Cys Gly
130 135 140



Pro Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr
 145 150 155 160

Cys Lys Cys Ser Cys Lys Asn Thr His Ser Arg Cys Lys Ala Arg Gln
 165 170 175

Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
 180 185 190

<210> 5

<211> 170

<212> PRT

<213> Homo sapiens

<400> 5

Met Pro Val Met Arg Leu Phe Pro Cys Phe Leu Gln Leu Leu Ala Gly
 1 5 10 15

Leu Ala Leu Pro Ala Val Pro Pro Gln Gln Trp Ala Leu Ser Ala Gly
 20 25 30

Asn Gly Ser Ser Glu Val Glu Val Val Pro Phe Gln Glu Val Trp Gly
 35 40 45

Arg Ser Tyr Cys Arg Ala Leu Glu Arg Leu Val Asp Val Val Ser Glu
 50 55 60

Tyr Pro Ser Glu Val Glu His Met Phe Ser Pro Ser Cys Val Ser Leu
 65 70 75 80

Leu Arg Cys Thr Gly Cys Cys Gly Asp Glu Asp Leu His Cys Val Pro
 85 90 95

Val Glu Thr Ala Asn Val Thr Met Gln Leu Leu Lys Ile Arg Ser Gly
 100 105 110

Asp Arg Pro Ser Tyr Val Glu Leu Thr Phe Ser Gln His Val Arg Cys
 115 120 125

Glu Cys Arg Pro Leu Arg Glu Lys Met Lys Pro Glu Arg Arg Arg Pro
 130 135 140

Lys Gly Arg Gly Lys Arg Arg Arg Glu Asn Gln Arg Pro Thr Asp Cys
 145 150 155 160

His Leu Cys Gly Asp Ala Val Pro Arg Arg

50

165

170

<210> 6

<211> 188

<212> PRT

<213> Homo sapiens

<400> 6

Met Ser Pro Leu Leu Arg Arg Leu Leu Leu Ala Ala Leu Leu Gln Leu
 1 5 10 15

Ala Pro Ala Gln Ala Pro Val Ser Gln Pro Asp Ala Pro Gly His Gln
 20 25 30

Arg Lys Val Val Ser Trp Ile Asp Val Tyr Thr Arg Ala Thr Cys Gln
 35 40 45

Pro Arg Glu Val Val Val Pro Leu Thr Val Glu Leu Met Gly Thr Val
 50 55 60

Ala Lys Gln Leu Val Pro Ser Cys Val Thr Val Gln Arg Cys Gly Gly
 65 70 75 80

Cys Cys Pro Asp Asp Gly Leu Glu Cys Val Pro Thr Gly Gln His Gln
 85 90 95

Val Arg Met Gln Ile Leu Met Ile Arg Tyr Pro Ser Ser Gln Leu Gly
 100 105 110

Glu Met Ser Leu Glu Glu His Ser Gln Cys Glu Cys Arg Pro Lys Lys
 115 120 125

Lys Asp Ser Ala Val Lys Pro Asp Ser Pro Arg Pro Leu Cys Pro Arg
 130 135 140

Cys Thr Gln His His Gln Arg Pro Asp Pro Arg Thr Cys Arg Cys Arg
 145 150 155 160

Cys Arg Arg Arg Ser Phe Leu Arg Cys Gln Gly Arg Gly Leu Glu Leu
 165 170 175

Asn Pro Asp Thr Cys Arg Cys Arg Lys Leu Arg Arg
 180 185

<210> 7

<211> 228

<212> PRT

<213> Homo sapiens

<400> 7

His Asn Arg Glu Gln Ala Asn Leu Asn Ser Arg Thr Glu Glu Thr Ile
1 5 10 15

Lys Phe Ala Ala Ala His Tyr Asn Thr Glu Ile Leu Lys Ser Ile Asp
20 25 30

Asn Glu Trp Arg Lys Thr Gln Cys Met Pro Arg Glu Val Cys Ile Asp
35 40 45

Val Gly Lys Glu Phe Gly Val Ala Thr Asn Thr Phe Phe Lys Pro Pro
50 55 60

Cys Val Ser Val Tyr Arg Cys Gly Gly Cys Cys Asn Ser Glu Gly Leu
65 70 75 80

Gln Cys Met Asn Thr Ser Thr Ser Tyr Leu Ser Lys Thr Leu Phe Glu
85 90 95

Ile Thr Val Pro Leu Ser Gln Gly Pro Lys Pro Val Thr Ile Ser Phe
100 105 110

Ala Asn His Thr Ser Cys Arg Cys Met Ser Lys Leu Asp Val Tyr Arg
115 120 125

Gln Val His Ser Ile Ile Arg Arg Ser Leu Pro Ala Thr Leu Pro Gln
130 135 140

Cys Gln Ala Ala Asn Lys Thr Cys Pro Thr Asn Tyr Met Trp Asn Asn
145 150 155 160

His Ile Cys Arg Cys Leu Ala Gln Glu Asp Phe Met Phe Ser Ser Asp
165 170 175

Ala Gly Asp Asp Ser Thr Asp Gly Phe His Asp Ile Cys Gly Pro Asn
180 185 190

Lys Glu Leu Asp Glu Glu Thr Cys Gln Cys Val Cys Arg Ala Gly Leu
195 200 205

Arg Pro Ala Ser Cys Gly Pro His Lys Glu Leu Asp Arg Asn Ser Cys
210 215 220

Gln Cys Val Cys
225

51

<210> 8

<211> 197

<212> PRT

<213> Homo sapiens

<400> 8

Met Asp Ser Arg Ser Ala Ser His Arg Ser Thr Arg Phe Ala Ala Thr
1 5 10 15

Phe Tyr Asp Ile Glu Thr Leu Lys Val Ile Asp Glu Glu Trp Gln Arg
20 25 30

Thr Gln Cys Ser Pro Arg Glu Thr Cys Val Glu Val Ala Ser Glu Leu
35 40 45

Gly Lys Ser Thr Asn Thr Phe Phe Lys Pro Pro Cys Val Asn Val Phe
50 55 60

Arg Cys Gly Gly Cys Cys Asn Glu Glu Ser Leu Ile Cys Met Asn Thr
65 70 75 80

Ser Thr Ser Tyr Ile Ser Lys Gln Leu Phe Glu Ile Ser Val Pro Leu
85 90 95

Thr Ser Val Pro Glu Leu Val Pro Val Lys Val Ala Asn His Thr Gly
100 105 110

Cys Lys Cys Leu Pro Thr Ala Pro Arg His Pro Tyr Ser Ile Ile Arg
115 120 125

Arg Ser Ile Gln Ile Pro Glu Glu Asp Arg Cys Ser His Ser Lys Lys
130 135 140

Leu Cys Pro Ile Asp Met Leu Trp Asp Ser Asn Lys Cys Lys Cys Val
145 150 155 160

Leu Gln Glu Glu Asn Pro Leu Ala Gly Thr Glu Asp His Ser His Leu
165 170 175

Gln Glu Pro Ala Leu Cys Gly Pro His Met Met Phe Asp Glu Asp Arg
180 185 190

Cys Glu Cys Val Cys
195

53

<210> 9
<211> 13
<212> PRT
<213> Orf virus

<220>
<221> UNSURE
<222> (2)
<223> Any amino acid

<220>
<221> UNSURE
<222> (4)..(7)
<223> Any amino acid

<220>
<221> UNSURE
<222> (10)
<223> Any amino acid

<220>
<223> This amino acid sequence motif can be found at
residue positions 59-71 of SEQ ID NO:2

<400> 9
Pro Xaa Cys Xaa Xaa Xaa Xaa Arg Cys Xaa Gly Cys Cys
1 5 10

<210> 10
<211> 399
<212> DNA
<213> Orf virus

<400> 10
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gacagcacga aaacatggtc cgaggtgttt gaaagcagta agtgcaagcc aaggccaacg 120
gtcgttcccc taggcgaggc gcacccagag ctaacttctc agcggttcaa cccgcagtgt 180
gtcacagtga tgcgatgcgg cgggtgctgc aacgacgaga gcttggaatg cgtccccacg 240
gaagaggcaa acgtgacgat gcaactcatg ggggcgtcgg tctccggtgg taacgggatg 300
caacatttga tattcgtaga gcataagaaa tgcgattgta aaccacgact cacaaccacg 360
ccaccgacga ccacaaggcc gcccagaaga cgccgctag 399

<210> 11
<211> 132
<212> PRT
<213> Orf virus

54

<400> 11

Met Lys Leu Leu Val Gly Ile Leu Val Ala Val Cys Leu His Gln Tyr
1 5 10 15

Leu Leu Asn Ala Asp Ser Thr Lys Thr Trp Ser Glu Val Phe Glu Ser
20 25 30

Ser Lys Cys Lys Pro Arg Pro Thr Val Val Pro Val Gly Glu Ala His
35 40 45

Pro Glu Leu Thr Ser Gln Arg Phe Asn Pro Gln Cys Val Thr Val Met
50 55 60

Arg Cys Gly Gly Cys Cys Asn Asp Glu Ser Leu Glu Cys Val Pro Thr
65 70 75 80

Glu Glu Ala Asn Val Thr Met Gln Leu Met Gly Ala Ser Val Ser Gly
85 90 95

Gly Asn Gly Met Gln His Leu Ile Phe Val Glu His Lys Lys Cys Asp
100 105 110

Cys Lys Pro Arg Leu Thr Thr Thr Pro Pro Thr Thr Thr Arg Pro Pro
115 120 125

Arg Arg Arg Arg
130

545